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differentiation into basidia or gonidiophores. From 4-6 by 3-4 centimetres, and 3-4 millimetres thick at the base, thinner toward the margin. Every portion perfectly smooth. Berkeley's remark "uno puncto affixa," must have been a slip of the pen.

Tremella rufo-lutea, B. & C., Journ. Linn. Soc., 1869, Vol. x, p. 340; Sacc. Syll., Vol. vi, No. 8394.

DESCRIPTION OF PLATE.

1. *Sarcomyces vinosa*, section, natural size.
- 2, 3. Ascus, spores, and paraphyses of same, X 400.
4. *Dacryopsis gyrocephala*, natural size.
5. Same, X 6.
- 6, 7. Portion of hymenium and spores of same, X 400.
8. *Peziza protrusa*, X 75.
9. Portion of hymenium and margin of same in section, X 400.
10. Ascii and spores of same, X 400.
11. Spores of same, X 1,200.
12. *Cyphella tela*, X 75.
13. Portion of hymenium of same, X 400.
14. *Dacryomyces enata*, natural size.
15. Spores of same, X 400.
16. *Stamnaria pusio*, natural size.
- 17, 18. Ascus, paraphyses, and spores of same, X 400.
19. *Dacryopsis Ellisiana*, natural size.
20. Section of portion of hymenium of same, X 400.
21. Gonidiophores and gonidia of same, X 1,200.
22. *Dacryopsis unicolor*, natural size.
23. Gonidiophores and gonidia of same, X 1,200.
24. Spores of same, X 400.
25. *Dacryopsis nuda*, natural size.
26. Section of portion of hymenium of same, X 400.

INDEX TO NORTH AMERICAN MYCOLOGICAL LITERATURE.

By DAVID G. FAIRCHILD.

177. ANDERSON, F. W. Biographical sketch of J. B. Ellis. Bot. Gaz. Crawfordsville, Indiana, Vol. xv, No. 11, November, 1890, pp. 299-304. Gives an account of the life of this pioneer of North American Mycology.
178. BAILEY, L. H. Peaches and yellows in the Chesapeake country. American Garden, New York, January, 1891, Vol. xii, No. 1, pp. 20-23. Describes conditions of the disease in Maryland and Delaware. Refers to late investigations of the Division of Vegetable Pathology, showing disease to be of contagious nature not affected by fertilizers.
179. ——. The peach yellows. Bull. xxv., Cornell Agr. Ex. Sta. Ithaca, New York, December, 1890, pp. 178-180. Gives account of work of Dr. Erwin F. Smith, of the Department of Agriculture, upon the disease, with note as to the New York State law in regard to the matter.
180. BESSEY, CHAS. E. An old botanical letter. Am. Nat., December, 1890, Vol. xxiv, No. 288, p. 1196. Gives verbatim copy of a letter written by C. H. Persoon to Sowerby, from Göttingen, May 2, 1801, alluding to the latter's "English Fungi."

181. ——. The host index of the fungi of the United States. *Am. Nat.*, xxiv, No. 288, December, 1890, p. 1196. Notices work of Farlow and Seymour with word of commendation. (See 126.)

182. ——. Some bad station botany. *Ibid.*, p. 1197. Criticises bulletin of Ohio Experiment Station upon wheat smut.

183. ——. Wheat smut. *Ibid.* Notices excellent work of Kellerman and Swingle in Bull. 12 of Kans. Ag. Experiment Station. (See 157.)

184. ——. North American species of *Tylostoma*. *Ibid.*, p. 1199. Refers to work by A. P. Morgan upon the revision of the genus *Tylostoma*.

185. ——. New North American fungi. *Ibid.* (See 124.)

186. BOYLE, D. R. A parasitic fungus. *The Microscope*, November, 1890, Vol. x, No. 11, p. 343. Note given of discovery at Cape Breton of larva of May beetle attacked by fungus arising from the head. (Name not given.) Specimen sent to Nova Scotian Institute of Natural Sciences by Mr. Boyle.

187. BRAIARD, MAJOR. Champignons nouveaux. *Revue Mycologique*, Toulouse, October, 1890, No. 48, p. 177. Describes *Physalospora pseudo-pustula* (Berk. & Curt.) Braiard & Hariot, (*Sphaeria pustula*, B. & C.) on rotten leaf from United States, Farlow, legit.

188. BURRILL, T. J. Preliminary notes upon the rotting of potatoes. *Proc. Eleventh Ann. Meeting Soc. for Promotion of Agricultural Science*, Indianapolis, Indiana, August, 1890. Notes as genetically connected with the rot of Irish potato tubers a species of bacterium, and records its isolation on culture media with inoculations upon healthy tubers.

189. ——. A bacterial disease of corn (with fig.). *Third Ann. Report of Illinois Ag. Ex. Sta.*, 1889-1890 (issued 1890). Extract from Bull. No. 6, Illinois Ag. Ex. Sta. Mentions inoculation experiments with pure cultures of bacterium as causing disease, with opinion that the same germs may cause death of cattle when diseased corn stalks are eaten.

190. COOKE, M. C. Some exotic fungi. *Grevillea*, June, 1890, Vol. 18, No. 88, p. 86. Describes *Lizonia sphagni*, n. s., on dead *Sphagnum* from Maine and *Valsa (Eutypella) clavulata*, n. s., on *Ailanthus* bark. Collected by Mrs. Britton on Staten Island.

191. ——. North American fungi. *Grevillea*, September, 1890, Vol. xix, No. 89, pp. 14-15. Describes *Cyphella fumosa*, n. s. On rotting leaves of *Gladiolus*, South Carolina, *Rhabdospora sabalensis*, n. s., on *Sabal*, South Carolina. *Stilbum (Ciliocopodium) auriflum*, Gerard., on *Daedalea unicolor*, United States, and *Uredo amsoniae*, n. s., on *Amsonia*, South Carolina.

192. DUDLEY, W. R. The hollyhock rust (with fig.). *Bull. xxv, Cornell Ag. Ex. Sta.*, Ithaca, New York, December, 1890, pp. 154-155. Gives popular description of *Puccinia malvacearum*, Mont., suggesting as a remedy permanganate of potash, two tablespoonfuls of saturated solution to 1 quart of water; applied with a sponge.

193. ELLIS, J. B., AND EVERHART, B. M. The North American Pyrenomycetes. A contribution to mycologic botany. *Bull. Torrey Bot. Club*, New York, January 1891, Vol. xviii, No. 1, p. 31. Give notice of subsequent appearance of the work by placing advance sheets in the hands of the editors of the Bulletin.

194. GALLOWAY, B. T. Note on the nomenclature of *Uncinula spiralis*, B. & C. *Bot. Gaz.*, December 26, 1890, Vol. xv, No. 12, p. 339. Gives correct synonymy of the species, preferring *Uncinula spiralis*, Berkeley & Curtis, 1857.

195. ——. Some recent observations on black rot of the grape. *Ibid.*, pp. 60-63. Gives the results of three experiments to prove the relationship between *Phyllosticta labruscae*, Thüm., *P. ampelopsisidis*, E. & M., and *Lastadia Bidwellii* (Ell.) V. & R. Records characteristic *Phyllosticta* spots upon *Ampelopsis* and *Vitis* from sowings of ascospores of *Lastadia Bidwellii* (Ell.), V. & R., and entirely negative results from all sowings of pycnidia spores. (See 130.)

196. —— AND FAIRCHILD, D. G. **A comparative test of some of the copper preparations in the treatment of black rot of grapes.** Proc. 11th Ann. Meeting Society for the Promotion of Agricultural Science, Indianapolis, Indiana, August 18, 19, 1890, pp. 59, 60 (issued December, 1890). Give result of experiments in Virginia to test comparative efficacy of Bordeaux mixture, ammoniacal solution of copper carbonate, copper carbonate in suspension, and combination of Bordeaux mixture and ammoniacal solution of copper carbonate, three treatments of the former, five of the latter. Conclude Bordeaux to have saved the largest per cent of fruit, but ammoniacal solution to be most economical.

197. GARMAN, H. **Some strawberry pests; the strawberry leaf-blight fungus.** Bull. 31, Kentucky Ag. Ex. Sta., December, 1890, Lexington, Kentucky, pp. 3-13. Describes disease with figures giving results of careful experiments with Bordeaux mixture, eau celeste, liver of sulphur, and London purple as preventives. Concludes Bordeaux, applied at intervals of two weeks after removal of berries, most effective in prevention of *Ramularia Tulasnei*, Sacc., eau celeste standing second, and London purple, although better than no fungicide, standing last. Thinks the removal of diseased leaves in summer, if not followed by fungicidal applications, more injurious than beneficial, because lessening shade to young leaves.

198. HALL, CLIFFORD C. **Stinking smut of wheat.** The Modern Miller, Kansas City, Missouri, October 1890, Vol. 14, No. 9, p. 255 (with fig. from Bull. 12, Kans. Ex. Station). Gives short extract from Bull. 12, Kans. Ag. Ex. Station, 1890. (See 157.)

199. HALSTED, B. D. **Some fungous diseases of the sweet potato.** Bull. 76, New Jersey Ag. Ex. Station, New Brunswick, New Jersey, November 28, 1890 (with numerous figures). Describes, with figures and recommendations for treatment, soft rot, (*Rhizopus nigricans*, Ehr.), black rot (*Ceratocystis fimbriata*, Ell. & Hals., n. s.) soil rot, (*Acrocystis batatas*, Ell. & Hals., n. s.) stem rot, white rot (*Penicillium*, sp.), dry rot, (*Phoma batatae*, Ell. & Hals., n. s.) seurf, (*Monilochates infuscans*, Ell. & Hals. n. s.) leaf-blight (*Phyllosticta bataticola*, E. & I.), leaf mold [*Cystopus ipomaeæ-panduranae*, (Schw.) Farl.]. A very valuable bulletin of monographic nature, to furnish a basis for experimental work upon the diseases of this important crop.

200. ——. **Notes upon Peronosporeæ for 1890.** Bot. Gaz., December 26, 1890, Vol. xv, No. 12, pp. 320-324. Gives notes of abundance, destructiveness, and previous mention in America of the following: *Phytophthora infestans*, DBy.; *P. phaseoli*, Thaxt.; *Plasmopara viticola*, (B. & C.), Berl & DeT., on *Vitis*, *Amelopsis tricuspidata*, and *A. quinquefolia*; *P. Entospora*, Schröt, on *Erigeron Canadense*; *P. geranii*, (Peck) Berl., on *G. Carolinianum*; *Bremia lactucae*, Regel, on *L. Canadensis*; *P. parasitica*, DBy., on *Cardamine*, *hirsuta*, *C. laciniiata*, *Hesperis matronalis*, and outer leaves of cabbage; *P. viola*, DBy., on *Viola*, sp.; *P. Cubensis* on cucumbers; *P. effusa* on *Spinacea*; *P. Ficariae*, Tul., on *Ranunculus abortivus*; *P. alta*, Fl., on *Plantago major*, *P. lanceolata*, and *P. Virginica*; *P. obovata*, Bonord. on *Spergula arvensis* found with *Puccinia spergulae*, DC., a new rust to this country; *Cystopus ipomaeæ-panduranae*, (Schw.) Farl.

201. ——. **A new anthracnose of peppers** (with fig.). Bull. Torr. Bot. Club, Vol. XVIII No. 1, pp. 14-15. Describes as new *Colletotrichum nigrum*, Ellis & Halsted, which attacks and causes serious damage to the fruits of *Capsicum annuum* in New Jersey.

202. ——. **The rot among late potatoes.** Garden and Forest, New York, November 12, 1890, Vol. III, No. 142, p. 551 (1 column). Notes destructiveness in New Jersey in 1890. Recommends spraying with copper compounds.

203. ——. **The root rot of salsify.** Garden and Forest, New York, November 26, 1890, Vol. III, No. 144, p. 576 (1 column). Notes disease of salsify closely connected with bacteria; which bacteria are able to cause rot in the egg plant, sweet potato, white potato, onion, and apple. The germ not isolated in cultures.

204. ——. **The cranberry scald** (with figs.). Garden and Forest, New York, December 3, 1890, Vol. III, No. 145, p. 583 (2 columns). Gives account of the scald with conditions probably favorable to the development of the disease, as decaying vegetation and stagnant water.

205. ——. **The mignonette disease.** Garden and Forest, New York, January 21, 1891, Vol. IV, No. 152, p. 33 (half column). Notes destructive case of *Cercospora reseda*, Fekl., upon hot-house mignonette, recommending Bordeaux mixture as preventive.

206. ——. **The potato rot; its nature, and suggestions for checking it in the future** (with fig.). Rural New Yorker, New York, Vol. XLIX, No. 2129, p. 771, November 15, 1890. Popular exposition of subject, suggesting remedies.

207. ——. **The rots of the sweet potatoes.** Proc. 11th Ann. Meeting Society for the Promotion of Agricultural Science, Indianapolis, Indiana, August 18, 19, 1890, pp. 27-28 (issued December, 1890). (Abstract.) Discusses briefly ground rot, soft rot, black rot, or black root, yellow rot or stem rot, and dry rot, giving general characters and results of investigation. Notes *Rhizopus nigricans* as cause of soft rot and *Penicillium* as cause of dry rot.

208. HARIOT, P., AND KARSTEN, P. A. **Micromycetes novi.** Revue Mycologique, Toulouse, July, 1890, No. 47. Describes *Calosphaeria smilacis*, Kars. & Har., on *Smilax* from Ohio, legit Lesquereux. *Cornularia Rhois*, (Berk.?) Karst. *Spharonema Rhois*, Berk. Syn. ? On *Rhois* from Ohio, legit Lesquereux; *Phoma picea* (Pers.) Sacc., var. *chenopodii*, Karst & Har. on *Chenopodium* from Ohio, Lesquereux legit.

209. HOWELL, J. K. **The clover rust** [*Uromyces trifolii*, (Alb. & Schw.) Wint.]. Bull. XXIV, December, 1890. Cornell Univ. Ag. Ex. Sta., Ithaca, New York, pp. 129-139. (with figs.). Note by W. R. Dudley. Gives occurrence, distribution, and injuriousness of the parasite, with careful description of vegetative and reproductive organs and observations on development; also, an account of artificial cultures and infections. Concludes the fungus to be propagated throughout the growing season by *Uredo* spores, which prefer a low temperature in germination, and are genetically connected with the aecidial stage.

210. JONES, L. R. **The potato rot and apple scab.** Newspaper Bull. No. 2, Vermont Agr. Ex. Sta., Burlington, Vermont, 1890. Popular description of fungi causing diseases, with formulæ for copper compounds and directions for treatment.

211. KELLERMAN, W. A. **More about smut of oats.** Industrialist, Manhattan, Kansas, January 24, 1891, Vol. XVI, No. 18, p. 69 (1½ columns). Announces the preparation of Bull. 15, Kans. State Agr. Ex. Station to appear subsequently. Records the discovery of quantities of hidden smut in plats of oats, pointing to a too low estimate of injury. Claims for the Jensen hot-water method augmentation of oat crop in excess of that due to prevention of the smut, mentions as promising fungicide, one-half per cent solution of potassium sulphide, 1 pound to 24 gallons of water, leaving seed in the solution 24 hours. Gives as probable loss from smut in Kansas for 1888-'89-'90 a little less than six millions of dollars.

212. —— AND SWINGLE, W. T. **Preliminary experiments with fungicides for stinking smut of wheat.** Report of Kansas State Board of Agr. for month ending August 31 (issued October 1, 1890), pp. 5-29, with plate. Reprint Bull. 12 of Botanical Dept. Agr. Ex. Sta., Manhattan, Kansas, August 1890 (issued October 1). (See 157.)

213. LAGERHEIM, G. DE. **Note sur un nouveau parasite dangereux de la Vigne** (*Uredo Vialae*, sp. nov.). Comptes Rendus, Paris, Tome CX, 1890, p. 728, and Rev. Gen. de Bot., September 15, 1890. Describes *Uredo Vialae* as a new Uredineæ upon leaves of *Vitis* found in Jamaica near Rockfort. Decides it entirely different from *U. vitis*, Thüm., which is not a fungus. Of special interest as the first recorded Uredineæ upon *Vitis*. Name in honor of P. Viala.

214. LELONG, B. M. **Fungous growths.** Thirteenth Ann. Report of Secretary of California State Board of Agr. Supplement, pp. 242-249 (with 11 lith. plate). Gives general description of fungi, quoting from Harkness, California State Board of Hort, 1883, and treats of Shot-hole apricot fungus (*Septoria cerasina*, Pk.) (with fig.), mentioning spread of disease to peach, plum, prune, and even apple and pear trees adjacent to apricots. Suggests various remedies. Pear cracking and leaf blight (*Entomosporium maculatum*, Lév.) (with figs.), quotes from Galloway's report, U. S. Dept. Agriculture, both as to fungus and remedies. Recommends as most successful remedy applied both for scale and fungus, sulphur 3 pounds, caustic soda (98 per cent) 2 pounds, whale oil soap, 25 pounds made up to 100 gallons. Apple scab [*Fusicladium dendriticum*, (Wallr.) Fckl.] (with fig.), gives summary of description and treatment of diseases in Report of U. S. Dept. Agr. 1887, also results of Professor Taft's Experiments, in Bull. 11, Div. Veg. Path., U. S. Dept. Agr. (See 104.)

215. MAYNARD, S. T. **Fungicides and insecticides on the apple, pear, and plum.** Bull. No. 11. Mass. Hatch Ex. Sta. Gives results of experiments in which the ammoniacal solution of copper carbonate mixed with Paris green solution injured the foliage and proved ineffectual against the scab (*Fusicladium dendriticum*). Mixtures of Bordeaux with Paris green proved equally ineffectual. Decides plum wart (*Plowrightia morbosa*), to be controllable by use of kerosene mixed with some bright colored pigment and also kept in check by use of Bordeaux. Gives analysis of 10 pounds of grapes, attached to stems and detached from stems, sprayed vigorously with Bordeaux as showing respectively 0.00996 and 0.00031 pound of copper oxide. Thinks Bordeaux effectual in treatment of mildew and "rot."

216. McILVAINE, CHAS. **Nature's peasants—Toadstools.** Youths' Companion, February 27, 1890, p. 114 (2 columns with figs.), treats in popular way of edible fungi, giving means of distinction.

217. PAMMEL, L. H. **Some fungus root diseases.** Proc. 11th Ann. Meet. Soc. for Prom. of Agricultural Science, Indianapolis, Indiana, August 1890, pp. 91-94. Gives general account of root diseases with special mention of a sclerotium root disease of *Helianthus annuus* resembling somewhat *Sclerotinia sclerotiorum*. Records experiment with iron sulphate, copper sulphate, chloride of lime, sulphur, and various fertilizers against cotton-root rot which proved wholly unsuccessful. Suggests rotation of crops as best method of dealing with such parasites.

218. PANTON, J. HOYES. **Smut; its habit and remedies.** Bull. LVI, Guelph Agricultural College, Guelph, December 9, 1890. Describes popularly *Tilletia caries* (bunt or stinking smut), *Ustilago carbo* (common or loose smut), recommending as remedies clean seed, copper sulphate 1 pound to 1 gallon of water, caustic potash, 1 pound in 6 gallons of water, brine, and immersion for 5 minutes in water at 135° F. or for 15 minutes in water at 132° F.

219. PATOUILLARD, N. **Fragments mycologique.** Journal de Bot., No. 10, 1890, describes *Ithyphallus cecullatus*, n. s. on the earth, Cambridge, Massachusetts. From herbarium of W. G. Farlow.

220. PECK, C. H. **Wheat smut and its treatment.** Cult. and Country Gent., Albany, New York, October 30, 1890, Vol. LV, No. 1970, p. 855 (2 columns). Describes in popular language the diseases caused by *Ustilago tritici*, *Tilletia foetens*, and *T. tritici*, giving extract from Bull. 12, Kansas Ag. Ex. Sta., containing description of Jensen hot-water method of treatment. (See 157.)

221. ——. **Potato rot. Bordeaux mixture.** Cult. and Country Gent., Albany, New York, November 30, 1890, Vol. LV, No. 1973, p. 916 (half column). Replies to inquiry about disease, recommending the Bordeaux mixture as remedy against *Phytophthora infestans*, DBy.

222. PEIRCE, GEO. J. Notes on *Corticium Oakesii*, B. & C., and *Michenera artocreas*, B. & C. (with plate). Bull. Torr. Bot. Club, New York, December 9, 1890, Vol. xvii, No. 12, pp. 301-310. Clears up the question of the method of spore formation in *Corticium Oakesii*, B. & C., deciding the basidial spores to be borne on basidia which are modified and developed paraphyses whose bristles have become larger fewer, longer, and more erect; and the conidial spores to appear upon similar bristles either before or after the formation of basidial spores. Decides the species of *Corticium* to be distinct from *C. amorphum*. Arrives at the conclusion in case of *Michenera artocreas* that a basidial stage does not exist, or is replaced by the conidial stage, which consists of flask-shaped mother cells containing single conidia and provided with flagellate tips.

223. PIERCE, N. B. The mysterious vine disease. Thirteenth Ann. Report California State Board of Horticulture, Sacramento, California, pp. 169-177. Compares the disease with *folletage* and *mal nero*, French and Italian diseases which bear a more or less close relation to it. Gives results of field and laboratory investigations, history of the spread and characteristics of the movements of the disease in California. Decides the malady not to be due exclusively to ordinary parasitic vine fungi, giving various views as to the cause of *folletage* and *mal nero*.

224. REX, GEO. A. Descriptions of three new species of *Myxomycetes*, with notes on other forms in century XXV of Ellis & Everhart, North American fungi. Proc. Acad. Nat. Sci., Philadelphia, Part II, April-September, 1890, pp. 192-196. Describes as new *Physarum tenerum*, Rex, No. 2489, N. A. F., *Trichia subfuscata*, Rex, No. 2495, *Trichia erecta*, Rex, No. 2496. Gives variations found to exist in *Didymium eximium*, Pk., No. 2493, N. A. F., and No. 2089, N. A. F., and thinks the two specimens distributed under these numbers referable to the above extremely variable species. Redescribes, on account of inadequacy of former descriptions, *Badhamia lilacina*, Fr., No. 2494, N. A. F.

225. ——. Notes on the development of *Tubulina cylindrica* and allied species of *Myxomycetes*. Bot. Gaz., December 26, 1890, Vol. xv, No. 12, pp. 315-320. Considers the formative plasmodium and subsequent stages in its relation to the systematic study of the *Myxomycetes*, citing various species to show the constancy of color in plasmodia of the same species. Expresses opinion that the color of corresponding stages of development of individual sporangia from plasmodium to maturity is always the same. Supports this view with observations upon *Tubulina cylindrica*, (Bull.), *T. stipitata*, and *Siphoptychium Casparyi*, Rostfk.

226. SCRIBNER, F. L. The *Entomosporium* of the pear and quince (with figs.). Orchard and Garden, Little Silver, New Jersey, September, 1890, Vol. xii, No. 9, p. 166. Discusses use of the word "blight" for the disease, and, together with popular description and notes on distribution, gives as most effective remedy Bordeaux mixture preceded by early treatments with simple solution of copper sulphate.

227. ——. Leaf spot disease of the plum and cherry (*Septoria cerasina*, Pk.) (with figs.). Orchard and Garden, Little Silver, New Jersey, October 1890, Vol. xii, No. 10, p. 183 (2 columns). Gives popular description of fungus, with recommendation that copper sulphate be used as preventive.

228. ——. Fungus diseases of grapevines (with figs.). *Ibid.* With aid of figures, illustrates characteristics of grape leaf-blight, black rot, and anthracnose upon the leaf, quoting results of experiment in treatment of black rot by the Department of Agriculture. (See 195.)

229. ——. Bean rust (with figs.). Orchard and Garden, Little Silver, New Jersey, November, 1890, Vol. xii, No. 11, p. 200-201. With excellent illustrations, describes carefully, in popular language, the life-history of *Uromyces phaseoli*. Recommends spraying with copper compounds and destruction of all infected material in the fall.

230. ——. **Beet Rust** (with fig. from Ann. Rep., 1887, U. S. Dept. of Agr.). *Ibid.*, p. 201. Mentions presence of disease as confined, so far as known, to California. Gives life-history, and suggests as remedies iron chloride in dilute solution.

231. ——. **Powdery mildew of the cherry** (with figs.). *Orchard and Garden, Little Silver*, New Jersey, December, 1890, Vol. XII, No. 12, pp. 210-211. Describes popularly the life-history of *Podosphaera oxyacantha*, recommending as preventive fungicide, sulphuret of potassium, one-half ounce to the gallon of water, applied while warm.

232. ——. **Treatment of anthracnose of the vine**. *Ibid.* (quarter column). Quotes formula for treatment from *Le Prog. Agricole*, October 26, 1890: Water, 3 gallons; iron sulphate, 7 pounds; copper sulphate, 2 pounds; sulphuric acid, 1 gill. Also, powder made by mixing equal parts of Portland cement and sublimated sulphur.

233. ——. **Rose leaf-blight**. *Ibid.* (with figs.). Gives popular description of *Cercospora rosaceola* and effects upon host. Thinks plants placed where air and light are abundant seldom suffer from the disease.

234. ——. **Beet leaf-blight** (with figs.). *Ibid.* Describes *Cercospora beticola* popularly, and recommends clear and open culture as means of lessening liability to disease.

235. SEYMOUR, A. B. **Rose rusts** (with figs.). *American Garden*, New York, October, 1890, Vol. XI, No. 10, p. 600. Notices *Phragmidium mucronatum* and *Ph. rose-alpinæ*, giving distinctions and life-history. Decides *Ph. mucronatum*, var. *Americanum*, Pk., to be identical with *Ph. rose-alpinæ*.

236. STEWART, HENRY. **Cotton rust**. *American Agriculturist*, New York, December, 1890, Vol. XLIX, No. 12, p. 638 (1 column). Denies popular belief that the disease is in any way connected with the growing of clover, and refers it to the attacks of a fungus (name not given).

237. STOKES, A. C. **A fungous parasite of Diatoms** (with figs. redrawn). *The Microscope*, January, 1891, Vol. XI, No. 1, pp. 24-26. Gives an account of a new genus of fungi (*Septocarpus*) described by Kopf in a monograph, as infecting diatoms in subalpine bog-pools of Norway, and translated by Mr. G. C. Karop in *Journal of the Quakett Microscopical Club*, London. The species of diatom affected was *Pinnularia*, and the fungus is considered distinct from that attacking Desmids.

238. THAXTER, ROLAND. **The potato scab**. *Bull. No. 105, Conn. Agrl. Ex. Sta.*, New Haven, December, 1890, pp. 3, 4. Gives preliminary report upon the disease which has been proved beyond doubt to be connected, as an effect, with an extremely minute fungus resembling, with exception of a branching character, certain polymorphic bacteria. Records careful inoculation experiments which establish connection between the "deep" scab and the fungus, and gives short account of pure cultures in solid culture media. Mentions work in progress upon morphologically identical fungus found commonly upon refuse material.

239. ——. **On certain new and peculiar North American Hyphomycetes, I.** (with Plates III and IV), *Bot. Gaz.*, Jan. 15, 1891, pp. 14, 26. Enumerates with valuable notes the American species of the genera *Edocephalum*, Preuss, as *E. glomerulosum* Bull.) Sacc., *E. echinulatum*, n. s., *E. verticillatum* n. s., *E. pallidum* (B. and Br.) Cost. Considering *E. elegans*, Preuss, as distinct from *E. glomerulosum* and *E. roseum*, Cook, as a synonym. Decides *Rhopalomyces pallidus*, B. and Br. and *R. candidus*, B. and Br. to be identical and synonyms of *E. pallidum*; and *Haplotrichum fimetarium*, Riess., as also a synonym of the same species. Gives *Rhopalomyces elegans*, Corda, *R. cucurbitarum*, Berk. & Rav., *R. strangulatus*, n. s., as known American members of the genus, and describes a new genus, *Sigmoideomyces*, upon the species *S. dispiroides*, found upon under side of a moist log, Burbank, east Tennessee. Notes that the genus bears much the same relation to *Edocephalum* that *Dispira* does to *Aspergillus*. Closes with synopsis of the described species of *Edocephalum* and *Rhopalomyces*.

240. WEED, C. M. The scab of wheat heads. Proc. 11th Ann. Meeting, Society for the Promotion of Agricultural Science, Indianapolis, Indiana, August 18, 19, 1890, pp. 47-48 (issued December, 1890, with figs.). Notes *Fusisporium culmorum*, W. G. Smith, as causing serious damage to the heads of wheat in Ohio.

241. —. A second experiment in preventing the injuries of potato blight. Bull. Ohio Ag. Ex. Sta., second series, Vol. III, No. 8, September, 1890. Gives report of somewhat unsatisfactory experiments against potato blight with use of Bordeaux and ammoniacal copper carbonate solutions. Notes bacterial disease as found by Burrill in Illinois.

242. WINGATE, HAROLD. *Orcadella operculata*, Wing. Nouveau Myxomycete. Revue Mycologique, Toulouse, April, 1890. (November, 1889), No. 46, p. 74. Describes a new family of *Myxomycetes* (*Orcadellaceæ*) consisting of the single species *Orcadella operculata*, found in Fairmount Park, Philadelphia, and also in Maine (Harvey), growing on living trunks of *Quercus rubra*. Considers it to stand in order 4 of Rostafinski after family 13 (*Clathroptychiaceæ*) and unites in a measure the orders *Anemæa* and *Heterodermiea*.